BEFORE THE
POSTAL RATE COMMISSION
WASHINGTON, D.C. 20268-0001

POSTAL RATE AND FEE CHANGES, 1997	)	**Docket No. R97-1**

REBUTTAL TESTIMONY
OF
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On Behalf Of
MAIL ORDER ASSOCIATION OF AMERICA,
ADVERTISING MAIL MARKETING ASSOCIATION,
AND
THE DIRECT MAIL MARKETING ASSOCIATION, INC.

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REBUTTAL TESTIMONY

OF

GARY M. ANDREW

My name is Gary M. Andrew. I am a Senior Consultant with the economic consulting firm of L. E. Peabody & Associates, Inc. I am the same Gary M. Andrew who submitted direct testimonies to the Postal Rate Commission ("PRC") dated December 30, 1997 on behalf of the Advertising Mail Marketing Association ("AMMA-T-2") and on behalf of the Recording Industry Association of America, et al. ("RIAA, et al.-T-1") in this proceeding. My qualifications and experience are described in Appendix A to each of my direct testimonies.

I. PURPOSE OF TESTIMONY

I have been requested by the Mail Order Association of America, the Advertising Mail Marketing Association and The Direct Marketing Association, Inc. (collectively referred to as "MOAA, et al.") to review the direct testimony of certain intervenors submitted on December 30, 1997 in the PRC Docket No. R97-1 Postal Rate and Fee Changes, 1997 ("R97-1"). Specifically, I have been requested to review:

1. the Newspaper Association of America ("NAA") Witness Sharon L. Chown's proposal for a new metric for assigning institutional costs (NAA-T-1);

2. Witness James A. Clifton's proposals[1/] ABA/NAA-T-1 and ABA/EEI/NAPM-T-1 for reducing certain First-Class rates and recovering the resulting revenue shortfall by increasing the rates of Standard (A) Commercial mail;

[1/] Witness Clifton submitted testimony for the American Bankers Association (ABA) and the Newspaper Association of America (NAA), separately he also submitted testimony on behalf of ABA, Edison Electric Institute ("EEI") and National Association of Presort Mailers ("NAPM"). The impact of both of Witness Clifton's proposals are combined in Technical Appendix D of ABA/EEI/NAPM-T-1; therefore, I have combined my review of his proposals into one section.

3. the Major Mailers Association ("MMA") Witness Richard E. Bentley's proposal to reduce certain First-Class workshared discounts (MMA-T-1); and,

4. the Association of Alternate Postal Systems ("AAPS") Witness Kenneth L. Bradstreet's comments regarding the United States Postal Services ("USPS") unfair competition to mailers (AAPS-T-1).

II. SUMMARY AND CONCLUSIONS

After reviewing the testimony of the intervenors listed above, the underlying workpapers, interrogatory responses, cross examination related to the direct testimony and other sources of pertinent information, I conclude the following:

1. NAA's Witness Chown's proposed metric should not be adopted for the following reasons:

   a. Witness Chown's proposed methodology in R90-1[2/] reflected an unbundling approach to the distribution of institutional costs. This approach was rejected by the PRC. Her proposal in this current proceeding regarding the calculation of a metric to aid in the assignment of "identifiable" institutional costs (i.e., the "Chown Metric") does not improve upon the rejected R90-1 methodology and should, therefore, be rejected;

   b. The Chown Metric begins with the development of a third tier of costs ("identifiable" institutional costs). This methodology is at odds with economic theory and practice in the use of costs in ratemaking;

   c. In a multi-product firm, economies of scope and scale allow mail to share the burden of institutional costs. Witness Chown's metric approach distorts the impact of economies of scope and scale; and

   d. When attributable or institutional costs change, the use of the Chown Metric in ratemaking will introduce serious inequities between subclasses and will not solve the perceived problem it attempts to address. Technically speaking, the Chown Metric is dynamically unstable.

2. Witness Clifton fails in his attempts to discredit the USPS proposal with respect to first, second and third ounce rates for workshared First-Class letter mail and has no basis for his proposed changes in coverage ratios. Specifically, Witness Clifton has erred in his analyses and conclusions in the following areas:

   a. Witness Clifton has mischaracterized historical changes in First-Class workshared mail unit costs and has projected test year costs based upon this mischaracterized, two year time series;

[2/] PRC Docket No. R90-1, Postal Rate and Fee Changes, 1990 ("R90-1").

b. Witness Clifton has failed to adequately justify proposed adjustments to USPS' Witness Hume's model of test year delivery costs and USPS Witness Hatfield's model of test year mail processing costs;

c. Witness Clifton's rejection of the Bulk Metered Mail benchmark and use of MC95-1 procedures to develop First-Class workshared discounts is a step backward in rate design and ignores both the best evidence of record and the PRC prior decision;

d. Witness Clifton's attempt to compare First-Class workshared letter rates and discounts to Standard (A) rates neglects the differences between these two classes of mail;

e. The proposal to decrease the cost coverage for First-Class workshared mail and increase the cost coverage for Standard (A) mail on the basis of efficiency and equity is not supported, furthermore, the changes in cost coverages are not and should not be required to fund First-Class workshare discounts if they are increased due to cost changes; and,

f. The allegations of First-Class subsidizing Standard (A) mail are false because of Witness Clifton's erroneous implementation of the incremental cost test for cross-subsidy.

3. MMA Witness Bentley's proposed changes to First-Class workshared discounts should be rejected because, like the analysis performed by Witness Clifton, the criticism of the USPS's studies is unfounded.

4. AAPS Witness Bradstreet's claim that the USPS' "anticompetitive, unjustifiable rate proposal" (AAPS-T-1, page 5) favors competitive mail at the expense of captive mail is unsupported for the following reasons:

a. The USPS as a "Monopoly" cannot be grouped with regulated monopolies like other utilities. The USPS is a very highly regulated entity that must operate on a breakeven basis with rates approved by the PRC;

b. Witness Bradstreet's "Rate Trend Comparison" does not support his claim that the USPS and PRC have been lowering rates for competitive mail (i.e., ECR saturation mail) at the expense of captive mail (i.e., First-Class letters and Standard (A) Basic nonletters);

c. Decreases in costs for ECR mail and the USPS' Ramsey Pricing analysis would warrant lower ECR rates.

The basis for these conclusions are discussed below under the following headings:

III. THEORETICAL AND PRACTICAL PROBLEMS IN NAA WITNESS CHOWN'S METRIC

On behalf of the Newspaper Association of America, Sharon L. Chown proposes an elaborate mechanism to serve as a starting point in the distribution of institutional costs. Starting with attributable costs calculated through the Postal Service's accounting mechanisms, Witness Chown redistributes these costs through each of five functional cost pools by applying an index that either increases or decreases attributable costs in each of the five function categories.

The Chown Metric is computed and used as follows.

For each function:

1. Determine the percentage of all identifiable institutional costs that are associated with a cost function;

2. Determine the percentage of all attributable costs that are associated with a cost function;

3. Compute a "weighting factor" that is the ratio of (1) and (2), that is, % of total identifiable institutional costs ÷ % of total attributed costs;[3/] and,

4. Multiply each attributed cost in the cost function by the weighting factor, resulting in weighted attributable costs.

Next, for each subclass:

1. Add up the weighted attributable costs for all functions (The result is the Chown Metric).

2. Use the resulting values (one for each subclass) as the basis to mark-up to cover all institutional costs.

[3/] The weighting factors (or indices) created by this ratio can cause Witness Chown's "weighted" attributable costs to be significantly different from traditionally calculated attributable costs. For example, for Witness Chown's "Delivery" function, the weighting factor is 210.03% (function-associated institutional costs representing 60.83% of total institutional costs deemed by Witness Chown function-specific divided by the 28.96% total attributable cost associated with Witness Chown's delivery function).

3. After the mark-ups are determined, the distribution of institutional costs based on those mark-ups are added to the actual attributable cost to determine the revenue requirement.

Witness Chown summarizes her view regarding the necessity for re-aligning attributable costs as follows:

> As this table [Table 3, Tr. 25/13270] shows, the proportion of institutional costs identified with any particular function is very different than the proportion of attributable costs associated with providing that function. For example, 50 percent of all attributable costs are associated with mail processing. However, mail processing does not account for 50 percent of the institutional costs. It accounts for only 28 percent of those institutional costs that can be identified with a particular function (Tr. 25/13394-95).
>
> * * *
>
> By weighting the attributable costs I give greater weight to the attributable costs of delivery, so if you are a subclass that only uses delivery, you are going to have a higher weighted attributable cost. Therefore, you will be assigned a greater proportion of institutional costs, all other things being equal. That's the problem I'm trying to correct here, is this by an unweighted cost giving greater — what happens with nonweighted cost, if it gives greater weight to those functions that are already very attributed. (Tr. 25/13396).

Witness Chown suggests that her redistributed attributable costs, though plainly deviating from volume variable (or marginal) costs, are sensible starting points for pricing decisions because the redistributed attributable costs approximate incremental costs:

> Second, I agree that economic efficiency requires a trade-off between costs and benefits at the margin and that marginal costs provide relevant information for making this tradeoff. However, it is also necessary to have relevant information on incremental costs. As Dr. Panzar points out:
>
> "If the monopolist's prices are set below per unit incremental costs, firms with superior productive techniques would be inefficiently deterred from entering the market." (USPS-T-11, page 10, lines 24-5 and page 11, line 1)

> Therefore, it is necessary to have information on both marginal costs and incremental costs when setting rate levels and determining the rate structures. (Tr. 25/13325).

Witness Chown's use of institutional costs to recalculate attributable costs for the purpose of determining institutional cost contributions is apparently based at least in part on her belief that functions cause identifiable incremental institutional costs:

> Q. Understood. But it's your testimony here that functions do cause institutional costs in that incremental cost sense that if you eliminate the function, you eliminate the institutional costs. Is that right?
>
> A. Yes, that is correct. If I don't have a delivery function and I don't have the carrier walking the street, his institutional costs, as well as his attributable costs, would be eliminated. (Tr. 25/13398-99).

This approach is plainly wrong from two perspectives. First, one cannot sensibly think about cost functions in terms of incremental cost causation in the context of Postal Service ratemaking. Witness Chown testified in the quotation above that a cost can be defined as incremental if it is eliminated when the USPS ceases to perform the function associated with that cost. However, the definition is vacuous because virtually all categories of mail use all of the cost functions identified by Witness Chown, and the elimination of any function would mean that the USPS had decided to put itself out of business, i.e., stop any function and you stop the mail. The delivery function on which Witness Chown focuses is the clearest example of this phenomenon. If the delivery function is eliminated, the USPS is eliminated.

Equally, it is not productive to characterize the costs of the functions identified by Witness Chown as incremental because it is not cost functions, but costs and rates for classes and subclasses of mail which are at issue. No mailer buys the delivery function; a mailer may buy the package of services that come with a first ounce First-Class stamp, or the services associated

with Standard (A) ECR Saturation mail dropshipped to the BMC. As USPS' Witness Panzar testified, incremental costs are important in measuring the absence of cross subsidies among the USPS' products. Economic definitions of cross-subsidy in a multi-product firm associate incremental costs with a product or service, not a specific account grouping. The USPS does not sell functions and, in consequence, the incremental costs of functions are entirely irrelevant to the rate proposals.

Witness Chown's proposal recommends moving away from conventionally computed attributable costs, which are a good proxy for marginal costs, to weighted attributable numbers that have no apparent justification in generally accepted economics of rate regulation. The USPS' attributable costs are its attributable costs and no amount of arithmetic manipulation can change that fact. Witness Chown's weighted attributable costs are not properly considered as costs related to any sub-class of mail and, consequently, cannot be the starting point for determining appropriate institutional cost contribution for any subclass.

The creation and use of the Chown Metric does not assist in solving the perceived problems regarding the relationship of attributable and institutional costs. In fact, the use of Witness Chown's proposal will introduce new problems in relationships between rates as shown below. My analysis of Witness Chown's proposal is presented below under the following headings:

A. Witness Chown's Historical and Current Methodologies

B. Claim of Identifiable Institutional Costs As A Third Tier Cost

C. Witness Chown Neglects Economics of Scale and Scope

D. The Chown Metric is Volatile When Cost Changes Occur

A. WITNESS CHOWN'S HISTORICAL AND CURRENT METHODOLOGIES

In Docket No. R90-1, Witness Chown submitted testimony (ANPA-T-2) proposing the "unbundling" of institutional costs through a methodology that separately calculated each subclass' contribution to institutional costs associated with each of three functions performed by the USPS. Although there are some mechanical differences between that proposal and her testimony in this case, the two methodologies have only two mathematical differences. When the R90-1 method is applied to the attributable cost with uniform markups at the cost function level[4/] and the sum of these marked-up attributable costs multiplied by the ratio of the total attributable cost to the total identifiable institutional costs[5/], the result will be the Chown Metric.[6/]

In other words, the Chown Metric is a restrictive form of the R90-1 methodology as proved in Exhibit__MOAA, et al.-1A. Witness Chown has acknowledged that the R90-1 methodology and the Chown Metric yield precisely the same results when equal markups are applied to all subclasses of mail through each method (Tr. 25/13306). She also acknowledged that when the same set of unequal markups are used in each of the two methods, considerably different results are obtained (Tr. 25/13304). Although the Chown Metric is procedurally different and may appear to be easier to use than the R90-1 unbundling procedure, none of the fundamental problems contained in the R90-1 unbundling proposal are solved by the computation and use of the Chown Metric.

4/ This is shown as equation b in Exhibit__MOAA, et al.-1A.

5/ This ratio (or scale factor) is the left hand term of equation e in Exhibit__MOAA, et al.-1A.

6/ This is shown as equation e in Exhibit__MOAA, et al.-1A and Witness Chown confirmed this proof in her response to AMMA/NAA-T-1-4 (Tr. 25/13322).

B. CLAIM OF IDENTIFIABLE INSTITUTIONAL COSTS AS A THIRD TIER COST

Witness Chown contends that she is "not proposing to attribute any institutional costs to particular subclasses of mail."[7/] In effect, however, she does so. The Chown Metric clearly defines and uses a "third tier"[8/] of costs. The computation of the Chown Metric constitutes a division of the institutional (non-attributable) costs into two parts; namely, "identifiable" institutional costs and "system-wide" institutional costs. The practical effect of this division, plus the attributable cost tier, is to create a third cost tier.[9/]

When computing the Chown Metric, the identifiable institutional costs do not appear to be added to the attributable costs but the impact on the redistribution of the attributable costs is the same. Despite her protestations to the contrary, the approach would lead to treating institutional costs as attributable costs in the pricing of postal services. Her metric establishes "weighted" costs that are not attributable costs, nor institutional costs, nor incremental costs. In fact, the Chown Metric is a method of distributing approximately two-thirds of the institutional costs to the attributable costs of subclasses and normalizing the result[10/], to form the weighted attributable costs. Witness Chown proposes the use of this weighted attributable cost as an aid to decision making in assigning all institutional costs ("identifiable" and system-wide). The distribution she creates is admittedly not based upon any causal relationship.[11/]

7/ See response to NNA/NAA-T1-1 (Tr. 25/13339).

8/ See PRC *Opinion and Recommended Decision*, Docket No. 84-1.

9/ In the creation of this third tier, Witness Chown takes another liberty in cost allocation. She "piggybacks" additional costs onto the identifiable institutional cost without sufficient justification. This increases the institutional costs that are identifiable from $13.6 billion (without piggyback) to $18.3 billion with piggyback.

10/ The result is normalized so that the weighted attributable costs for each subclass when, added together, equal the total attributable costs.

11/ See responses to AMMA/NAA-T1-2 and 5 (Tr. 25/13317 and 13323).

In summary, the Chown Metric creates a third cost tier (identifiable institutional costs). The use of this third tier in the computation of the Metric involves two unsupported arbitrary allocations (without proof of causality): 1) Use of the piggyback factor to allocate certain indirect costs to the identifiable institutional costs; and, 2) allocation of the resulting identifiable institutional costs to the attributable costs. Although Witness Chown characterizes her methodology as an aid to decision-making, her application is in fact a mechanical redistribution of attributable costs. More important, however characterized or used, the entire approach is at odds with sound allocation of costs for ratemaking.

C. WITNESS CHOWN NEGLECTS ECONOMIES OF SCALE AND SCOPE

Witness Chown claims that:

> Applying a mark-up to total attributable costs is appropriate only if (1) all mailers buy approximately the same mix of the four functions or (2) the ratio of institutional costs to attributable costs is relatively constant across all four functions.[12/]

There is no analytic proof of, or citations to economic literature verifying the validity of this assertion and it is clearly invalid when applied to an enterprise with extensive economies of scale and scope such as exist in the USPS. Economies of scale and scope can be defined as:

> *Economies of scale* occur when average costs decline as single product output increases, a factor most commonly due to the fixed and common costs "linked to an indivisibility (i.e., an unmeasured fixed input) which generates unavoidable excess capacity. *Economies of scope* are exhibited when the total costs of producing two or more products jointly is less than producing these products separately.[13/]

12/ NAA-T-2 at 4 (Tr. 25/13265). [See also Tr. 25/13269 and Tr. 25/13377].

13/ Bonbright, James C., et al., *Principles of Public Utility Rates*, Arlington, VA, Public Utility Reports, Inc. 1988 p. 31.

When economies of scale and scope exist in a firm, the negative consequence of unnecessary deviation from attributable costs as the basis for ratemaking is exacerbated. The economies of scope and scale allow mail to share the burden of institutional costs and benefit from the fact that the costs of producing all products is much less than the sum of producing each individual product line. In conditions of such favorable economies, the problem of products using resources with different volume variabilities is more perceived than real.

D. THE CHOWN METRIC IS VOLATILE WHEN COST CHANGES OCCUR

Any metric to be used in ratemaking must be designed to exhibit stability when the components of the metric undergo change. By stability, I mean that the metric should recognize when cost changes occur in a subclass of mail but not produce wide fluctuations in subclasses where no cost changes have occurred. The use of marginal costs as the point of departure for assignment of institutional costs does reflect a stable metric because the rates by subclass produced by use of marginal costs do not have wide unexplained fluctuations.

Prior to using any metric, even as an "aid" to ratemaking, it must be tested for stability when change in the system occurs. When a change occurs in the data inputs to a metric (costs), and major unreasonable changes occur in the outputs (rates), the metric is unstable. As shown below, the Chown Metric is unstable when either attributable or institutional costs change.

My examination of the instability in the Chown Metric utilizes the same example as presented in Tables 7 through 9 of Witness Chown's testimony. In the "Base Case", I compare the rates produced by her example using marginal costs versus the Chown Metric. In order to test the Chown Metric, I have developed three alternative cases. First, in Case 1, I show the

impact on rates if system-wide institutional costs are increased. Second, in Case 2, I show the impact on rates if the attributable costs for one class of mail are reduced (and no other changes are made to Witness Chown's example). Finally, Case 3 below shows the impact on rates associated with the combination of Case 1 and Case 2. The details supporting my examples are shown in Exhibit__MOAA, et al.-1B. As shown below, simple, specific changes in attributable or institutional costs cause dramatic disparities in rates following the Chown Metric. The analysis of the instability in the Chown Metric is discussed in the following cases:

1. Base Case: Witness Chown's Example
2. Case 1: Additions to System-Wide Institutional Costs
3. Case 2: Impact of Worksharing
4. Case 3: Impact of Additions to Institutional Costs and Worksharing

1. Base Case: Witness Chown's Example

I use the same three classes of mail (A, B, and C) and two cost functions (1 and 2) as shown in Tables 7 through Table 9 of Witness Chown's testimony (Tr. 25/13276-8) and have reproduced her example in Exhibit__MOAA, et al.-1B, page 1 of 4. Her example applies the uniform mark-up as demonstrated on page 1 of Exhibit__MOAA, et al.-1A.

Table 1 below shows the results obtained by the Marginal Cost Metric[14/] and by the Chown Metric when uniform mark-up is used on each metric. The attributable costs are shown in Column (2) of Table 1. The rates based on the Marginal Cost Metric and the Chown Metric are shown in Column (3) and Column (5) respectively. The coverage ratio for each class of

[14/] This is simply the use of the attributable cost as the basis for mark-up.

mail in the example is shown in Column (4) for the Marginal Cost Metric and Column (6) for the Chown Metric.

Table 1
Comparison of Ratemaking Dynamics:
The Marginal Cost Metric Versus the Chown Metric
Using Uniform Mark-Up

Base Case Example

Item	Attributable Costs	Marginal Cost Metric Rate	Marginal Cost Metric Coverage	Chown Metric Rate	Chown Metric Coverage
(1)	(2)	(3)	(4)	(5)	(6)
1. Class A	$125	$200	160%	$200	160%
2. Class B	75	120	160	90	120
3. Class C	50	80	160	110	220
4. Total	$250	$400	160%	$400	160%

Source: Columns (2), (3), and (5): Exhibit__MOAA, et al.-1B.
Column (4) = Column (3) ÷ Column (2).
Column (6) = Column (5) ÷ Column (2).

In Witness Chown's example, the total attributable costs equal $250 and the total revenues to be recouped equal $400 or an overall coverage ratio of 160%. For the Marginal Cost Metric, with equal mark-ups, the attributable costs for all classes are marked-up 60%, e.g., Class C attributable costs of $50 are assigned institutional costs of $30 for mark-up ($50 x .60). The addition of the attributable cost to the assigned institutional costs produces the rates (or

revenues), e.g. $50 plus $30 equals $80. However, under the Chown Metric, the weighted attributable costs vary from the actual attributable costs, as shown in the following tabulation.

Item (1)	Attributable Costs[1/] (2)	Weighted Attributable Costs[2/] (3)
1. Class A	$125	$125
2. Class B	75	25
3. Class C	50	100
4. Total	$250	$250

1/ Table 1, Column (2)
2/ Exhibit_MOAA, et al.-RT-1B, page 1. These costs reflect the redistribution based on assigning institutional costs following the Chown Metric methodology.

Next, under the Chown Metric, the overall mark-up of 60% is applied to the weighted attributable costs, e.g., Class C weighted attributable costs of $100 are multiplied by 60% to determine the mark-up of $60. The mark-up determined from the weighted average costs is then added to the attributable costs (not the weighted attributable costs) to equal the rate. For example, the mark-up amount for Class C of $60 shown above is added to the attributable costs of $50 (Table 1, Line 3, Column (2)) to determine the rate of $110 under the Chown Metric. (Table 1, Line 3, Column (5)). Witness Chown's example is consistent with her intent to give higher mark-ups to users of functions with low volume variability (Witness Chown's high identifiable institutional costs).

2. Case 1: Additions to System-Wide Institutional Costs

To test the behavior of the Chown Metric, I have altered her example[15/], assuming that $100 is added to the system-wide institutional costs. (Note, there were no system-wide institutional costs in Table 7 of Witness Chown's example). No other changes have been introduced into the system. The details of the changes to Witness Chown's example reflecting the additional institutional costs are shown on page 2 of Exhibit__MOAA, et al.-1B. Table 2 below summarizes the results of this one change.

Table 2
Comparison of Ratemaking Dynamics:
The Marginal Cost Metric Versus The Chown Metric
Using Uniform Mark-Up

Case 1: Add $100 to the System-Wide Institutional Costs

Item	Attributable Costs	Marginal Cost Metric Rate	Marginal Cost Metric Coverage	Chown Metric Rate	Chown Metric Coverage
(1)	(2)	(3)	(4)	(5)	(6)
1. Class A	$125	$250	200%	$250	200%
2. Class B	75	150	200	100	133
3. Class C	50	100	200	150	300
4. Total	$250	$500	200%	$500	200%

Source: Columns (2), (3), (5): Exhibit__MOAA, et al.-1B, page 2 of 4.
Column (4) = Column (3) ÷ Column (2).
Column (6) = Column (5) ÷ Column (2).

As shown in Table 2 above, the attributable costs of $250 (Column (2)) have remained the same as in Witness Chown's original example. However, because total costs have increased by

[15/] The changes introduced in these examples are large to test for extreme behavior. However, when smaller changes were tested, the inconsistencies maintained the same relationships.

\$100 from \$400 to \$500, the rates following the Marginal Cost Metric (Column (3)) and the coverage ratios have increased (Column (4)). The change to the institutional costs increase the coverage ratio, under the Marginal Cost Metric, from 160 percent (Table 1, Column (4)) to 200 percent (Table 2, Column (4)).

Under the Chown Metric, rates are also increased if institutional costs increase. However, using the Chown Metric, the increase in institutional costs creates a disproportionate increase in rates between the classes of mail as summarized in Table 3 below:

Table 3
Summary of Impact on Rates When Institutional Costs Change

	Marginal Cost Metric			Chown Metric		
	Rates		Percent	Rates		Percent
Item	Base[1/]	Case 1[2/]	Change	Base[1/]	Case 1[2/]	Change[4/]
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Class A	\$200	\$250	25%	\$200	\$250	25%
2. Class B	120	150	25%	90	100	11%
3. Class C	80	100	25%	110	150	36%
4. Total	\$400	\$500	25%	\$400	\$500	25%

[1/] Table 1 above.
[2/] Table 2 above.
[3/] Column (4) = Column (3) ÷ Column (2).
[4/] Column (7) = Column (6) ÷ Column (5).

Under the Marginal Cost Metric, the percent change in rates is uniform across all classes of mail (Table 3, Column (4)). However, following the Chown Metric, the increase in rates varies between 11 percent and 36 percent (Table 3, Column (7)). In summary, this simple change in input to Witness Chown's example indicates that the change in system-wide institutional costs, which by definition are not "identifiable" with any function or subclass, causes significantly different changes in the rates of the three classes under the Chown Metric.

3. Case 2: Impact of Worksharing

The next test of the Chown Metric for dynamic stability is shown in Table 4 below and assesses the impact on the Chown Metric due to cost savings from worksharing. The details supporting this example are shown in Exhibit__MOAA, et al.-1B, page 3 of 4. This example assumes that the costs in Class A are reduced by $25 due to worksharing, i.e., the value of 100 in Table 4, Line 1, Column (2) is $25 less than the Table 1, Line 1, Column (2) value of $125. The costs for Class B, Class C and all institutional costs remain the same as the base case (Table 1 above).

Table 4
Comparison of Ratemaking Dynamics:
The Marginal Cost Metric Versus The Chown Metric
Using Uniform Mark-Up

Case 2: Worksharing Costs Reduce Class A by $25

Item	Attributable Costs	Marginal Cost Metric Rate	Marginal Cost Metric Coverage	Chown Metric Rate	Chown Metric Coverage
(1)	(2)	(3)	(4)	(5)	(6)
1. Class A	$100	$167	167%	$155	155%
2. Class B	75	125	167	90	120
3. Class C	50	83	167	130	260
4. Total	$225	$375	167%	$375	200%

Source: Columns (2), (3), (5): Exhibit__MOAA, et al.-1B, page 3 of 4.
Column (4) = Column (3) ÷ Column (2).
Column (6) = Column (5) ÷ Column (2).

As shown in Table 4 above, the attributable costs are $225, reduced $25 from Witness Chown's original example. The change to the attributable costs increases the coverage ratio, under the Marginal Cost Metric, from 160 percent (Table 1, Column (4)) to 167 percent.

Under the Chown Metric, rates are changed if attributable costs decrease. The rates for Class A are decreased but the rates for Class C increase. (Class B rates remain constant). However, following the Chown Metric, the decrease in attributable costs again creates a disproportionate change in rates for the classes of mail as summarized in Table 5 below:

Table 5
Summary of Impact on Rates When Attributable Costs Decrease

	Marginal Cost Metric			Chown Metric		
	Rates		Percent	Rates		Percent
Item	Base[1/]	Case 2[2/]	Change	Base[1/]	Case 2[2/]	Change[4/]
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Class A	$200	$167	-17%	$200	$155	-23%
2. Class B	120	125	4	90	90	0
3. Class C	80	83	4	110	130	18
4. Total	$400	$375	-6%	$400	$375	-6%

[1/] Table 1 above.
[2/] Table 4 above.
[3/] Column (4) = Column (3) ÷ Column (2).
[4/] Column (7) = Column (6) ÷ Column (5).

Under the Marginal Cost Metric, the rate for Class A with the worksharing decreases 17% (Table 5, Line 1, Column (4)) while the rates for Classes B and C exhibit a uniform increase of 4%. (Table 5, Column (4), Lines 2 and 3). However, following the Chown Metric, the change in rates varies from a negative 23% for Class A to a positive 18 percent for Class C (Table 5, Column (7)). The Chown Metric produces very disturbing results with a larger decrease in the rate and coverage for the worksharing Class A. While Class B's rate is unchanged, the Class C mailers are assessed an 18% rate increase to cover the worksharing introduced by Class A.

3. Case 3: Impact of Additions to Institutional Costs and Worksharing

Finally, the interaction effects of changes in more than one variable on the Chown Metric are shown by combining the increase in system-wide institutional costs (Case 1) and the worksharing by Class A mailers in Case 2. The effects of these combined changes are developed in Exhibit__MOAA, et al.-1B, page 4 of 4 and summarized in Table 6 below.

Table 6
Comparison of Ratemaking Dynamics:
The Marginal Cost Metric Versus The Chown Metric
Using Uniform Mark-Up

Case 1: Add $100 to the System-Wide Institutional Costs and Deduct $25 for Worksharing

Item	Attributable Costs	Marginal Cost Metric Rate	Marginal Cost Metric Coverage	Chown Metric Rate	Chown Metric Coverage
(1)	(2)	(3)	(4)	(5)	(6)
1. Class A	$100	$211	211%	$192	192%
2. Class B	75	158	211	100	133
3. Class C	50	106	211	183	367
4. Total	$225	$475	211%	$475	211%

Source: Columns (2), (3), (5): Exhibit__MOAA, et al.-1B, page 4 of 4.
Column (4) = Column (3) ÷ Column (2).
Column (6) = Column (5) ÷ Column (2).

As shown in Table 6 above, the attributable costs equal $225, which is $25 less than shown in Witness Chown's original example and there was an increase in system-wide institutional costs of $100 resulting in the total rates equalling $475. These changes increase the coverage ratio under the Marginal Cost Metric from 160 percent to 211 percent (Table 6, Column (4)).

Under the Chown Metric, rates are also increased if costs are decreased due to worksharing and institutional costs increase (Table 6, Column (5)). These changes increase the coverage ratios for each class over her base case example.

However, following the Chown Metric, the changes create a disproportionate increase between rates for the classes of mail as summarized in Table 7 below:

Table 7
Summary of Impact on Rates When Attributable and Institutional Costs Change

	Marginal Cost Metric			Chown Metric		
	Rates		Percent	Rates		Percent
Item	Base[1/]	Case 3[2/]	Change	Base[1/]	Case 3[2/]	Change[4/]
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Class A	$200	$211	6%	$200	$192	-4%
2. Class B	120	158	32	90	100	11
3. Class C	80	106	32	110	183	67
4. Total	$400	$475	19%	$400	$475	19%

[1/] Table 1 above.
[2/] Table 6 above.
[3/] Column (4) = Column (3) ÷ Column (2).
[4/] Column (7) = Column (6) ÷ Column (5).

The Marginal Cost Metric increases the rates for Class A (the class responsible for the worksharing savings) increase by 6% while the rates for Classes B and C increase by 32%. Again, the Chown Metric produces volatile results. The rates for Class A decrease by 4%, the rates for Class B increase by 11% and the rates for Class C receive a 67% increase (Table 7, Column (7)).

As demonstrated by the results of simple system cost changes on rates, the dynamic behavior of the Chown Metric is unacceptable.[16/] The marginal cost metric, in addition to being theoretically superior, has the practical benefit of responding to changes in a reasonable, predictable manner.

[16/] The underlying problem in the Chown Metric involves non-linearity (ratio of ratios) which contain interaction effects causing a loss of independence between subclasses and volatile reaction to change. This can be proved using the partial derivatives of the metric; however, the above numerical example demonstrates these characteristics.

IV. CRITIQUE OF WITNESS CLIFTON'S PROPOSALS

In this proceeding, Witness Clifton's testimony proposes[17/] reductions in the rates for First-Class workshared mail from the rates proposed by Witness Fronk (USPS-T-32). Witness Clifton's testimony proposes four distinct adjustments to the USPS' models that calculate First-Class workshared discounts. Witness Clifton proposes a test year reduction in First-Class workshared letter mail processing costs[18/], a test year reduction in First-Class workshared letter delivery costs and a test year increase in the benchmark used to determine cost savings for workshared discounts. The location of these adjustments, in the context of the USPS model, can be seen in the flow chart which is attached as Exhibit_MOAA, et al.-RT-1C. The fourth adjustment made by Witness Clifton, a reduction in the cost coverage for First-Class workshared letter mail, is based upon subjective considerations of efficiency and equity. Each of these four adjustments increases the level of First-Class workshared discounts above the levels proposed by the USPS.

Witness Clifton's testimony (on behalf of ABA/NAA) argues for a decrease in the rates proposed by the USPS for First-Class workshared letters — second and third ounces. He bases his reduction on a misuse of incremental costs in his discussion of cross-subsidy. Witness Clifton opines that there is an "apparent" cross-subsidy of Standard (A) by First-Class workshared mail but fails to provide economic tests for cross-subsidy.

17/ Witness Clifton combines all the proposals in his Technical Appendix D; (Tr. 24/12596-12622) therefore, I have combined my rebuttal to his testimony into one section.

18/ This reduction manifests itself as a reduced roll forward factor in USPS Witness Hatfield's model.

The impact of these adjustments on First-Class workshared rates proposed by the USPS is shown in Table 8 below.

Table 8

Comparison of First-Class Workshared Letter Rates -- (Cents Per Piece)

Mail Class	Proposal		Difference
	USPS	Clifton	
(1)	(2)	(3)	(4)
1. Retail Presort	31.0¢	30.0¢	(1.0)¢
2. Basic Automation	27.5	26.1	(1.4)
3. 3-Digit	26.5	24.4	(2.1)
4. 5-Digit	24.9	22.8	(2.1)
5. Carrier Route	24.6	22.5	(2.1)
6. Second and Third Ounce	23.0	12.0	(11.0)

Source:
Column (2): Direct Testimony of David Frank, USPS-T-32, page 4 (revised 10/1/97)
Column (3): Tr. 24/12506 and Tr. 24/10829.
Column (4): Column (3) minus Column (2).

Witness Clifton's proposal (Table 8, lines 1-5) reduces the USPS' proposed First-Class workshared letter rates between 1.0 to 2.1 cents per piece. Witness Clifton's reduces the USPS' proposed First-Class workshared second and third ounce charges by 11.0 cents per piece (Table 8, line 6). In addition to the rate changes in workshared letters, Witness Clifton proposes a reduction for presort business cards between 1.0 cent to 1.6 cents from the USPS proposed rates.[19/]

Witness Clifton's testimony proposes to lower the First-Class cost coverage ratios, and fund the shortfall in First-Class revenues that will result from all his proposals, by increasing the cost

[19/] See response to USPS interrogatory at Tr. 24/12666 and Tr. 24/12599.

coverage ratio of Standard (A) Commercial Mail. These changes in coverage rations are not proper and unnecessary to gain rate relief desired by Witness Clifton if, indeed, workshared costs are found to be overstated by the USPS. The effects of Witness Clifton's proposals at the aggregate level can be demonstrated by a comparison of revenue and volume changes between his proposal and the USPS' proposal as shown in Table 9 below:

Table 9
Comparison of Witness Clifton and USPS Proposals -- (millions)

Item	Proposal: USPS	Proposal: Clifton	Difference[1/]
(1)	(2)	(3)	(4)
1. First-Class Workshared Mail			
a. Revenues	$11,466	$11,166	($300)
b. Volume	41,033	43,883	2,850
2. Standard (A) Commercial Mail			
a. Revenues	$12,326	$12,901	$575
b. Volumes	66,314	64,428	(1,886)

[1/] Column (3) minus Column (2)
Source:
Revenues: Tr. 24/12604
Volumes: Tr. 24/12602

Witness Clifton's proposals in R97-1 result in a reduction in revenue requirement of $300 million and an increase in volume of 2,850 million pieces for First-Class workshared mail. In addition, these proposals result in an increase in revenue requirement of $575 million and a decrease in volume of 1,886 million pieces for Standard (A) commercial mail.

It should be noted that although Witness Clifton reduces First-Class coverage by 2.14 percentage points,[20/] all of the more than three hundred million dollars in benefits from this

[20/] Tr. 24/12598

reduction is received by First-Class business mailers and none by single piece First-Class mailers. Witness Clifton's proposals reduce First-Class revenues by a total of 1.1 billion dollars.[21/]

Witness Clifton's testimony in this proceeding is both confusing and misleading. When the procedures and assumptions upon which his testimony is based are isolated and critiqued, Witness Clifton's proposal is shown to be flawed. My critique of Witness Clifton is presented below under the following headings:

A. Changes in Mix of Mail Categories are the Primary Reason for Declining USPS' Unit Costs from 1994 to 1996;

B. Witness Clifton's Roll Forward Adjustment is Based on Incorrect Cost Projections;

C. The Bulk Metered Mail Benchmark is Preferable for the Calculation of Workshared Discounts;

D. Standard (A) Costs and Rates Are Not Germane to the Estimation of First-Class Workshared Costs and Discounts;

E. Witness Clifton's Changes in Cost Coverages Fail to Consider Higher Level of Service and Are Not Necessary; and

F. Witness Clifton's Second and Third Ounce Rate Proposal is Based on False Claims of Cross-Subsidy.

A. CHANGES IN MIX OF MAIL CATEGORIES ARE THE PRIMARY REASON FOR DECLINING USPS' UNIT COSTS FROM 1994 TO 1996

At the outset of his direct testimony[22/], Witness Clifton highlights a comparison of the recent performance of total unit cost data for First-Class mail presort letters and parcels taken from the

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[21/] Tr. 24/12604

[22/] Tr. 24/12468.

USPS' audited Cost and Revenue Analysis ("CRA"). In Table 1 of his ABA/EEI/NAPM testimony he shows that the average unit attributable costs for presort letters and parcels (workshared mail) decreased from 11.9 cents per piece in 1994 to 10.6 cents per piece in 1996. This, he claims, represents a 10.9% decrease in the average unit costs of all workshared First-Class mail over a two year period. Later in his testimony, at Table 7, Witness Clifton highlights the recent performance of mail processing labor unit attributable costs for First-Class presort letters and parcels. In this comparison Witness Clifton claims that mail processing labor unit attributable costs decreased from 2.9 cents per piece in 1994 to 2.5 cents per piece in 1996. This represents a 13.8% decrease in these average unit costs over a two year period.

Witness Clifton justifies many of his subsequent adjustments to the USPS costing models on the basis that average unit costs as measured by the CRA have decreased between 10.9% and 13.8%. Witness Clifton assumes, in making many of his adjustments, that the dynamics causing the decrease in these unit costs will continue into the future and will result in reduced unit costs in the test year in this proceeding (1998).

The decrease in unit costs shown in the CRA data reflects changes due to multiple causes. For example, the explanation of the decrease in CRA unit cost over the 1994 through 1996 time period must consider the significant shift of mail volume within First-Class presort letters and parcels from nonautomation mail to automation mail. As noted by Witness Clifton there has been a shift in workshared First-Class volume mix from higher cost nonautomation mail to lower cost automation mail.[23/] This is shown in Table 10 below:

[23/] Tr. 24/12654.

Table 10
Volume Shift in First-Class Workshared Mail

Period (1)	Distribution By Year: Nonautomation (2)	Automation (3)	Total (4)
1. 1994	41.4%	58.6%	100%
2. 1996	28.7%	71.3%	100%
3. Change[1/]	(12.7%)	12.7%	xxx

Source: Tr. 24/12482.
[1/] Line 2 minus Line 1.

The volume of nonautomation First-Class workshared mail declined 12.7 percentage points from 41.4% in 1994 to 28.7% in 1996. From 1994 to 1996, the volume of automation First-Class workshared mail increased 12.7 percentage points from 58.6% to 71.3%. A shift in volume within workshared mail of this magnitude from a higher cost rate category of mail to a lower cost rate category of mail would cause a reduction in overall unit costs in the CRA.[24/]

Table 11 below is a hypothetical example that demonstrates the impact of volume mix on overall unit costs.

[24/] USPS-29C page 1 shows the mail processing and delivery costs of First-Class automation to be lower than nonautomation.

Table 11

Hypothetical Example of Impact of Mix of Mail on Average Unit Costs

Assumptions:

1. Unit costs in each rate category increase 10%
2. Shares of mail change as indicated.

Line Description	Rate Category		Weighted
	Nonautomation	Automation	Average Costs
(1)	(2)	(3)	(4)
1. 1994			
a. 1994 Costs (Cents/Piece)	$0.120	$0.060	xxx
b. Share (Percent)	75%	25%	xxx
c. Weighted Costs	$0.090	$0.015	$0.105
2. 1996			
a. 1996 Costs (Cents/Piece)[1/]	$0.132	$0.066	xxx
b. Share (Percent)	40%	60%	xxx
c. Weighted Costs	$0.053	$0.040	$0.093
3. Percent Change (L2c÷L1c)	xxx	xxx	(-)11.4%

[1/] Line 1a increased by 10 percent.

In the above Table 11 example the weighted average unit cost decreases 11.4% (line 3) over the period from 1994 to 1996 even though unit costs for each rate category (line 2a) increase 10.0% over the same time period. In other words, in the context of Table 3 above, Witness Clifton argues that because the average costs have decreased by 11.4%, there is no justification for raising the rates (or reducing the discounts) of either rate category.

Although the volume mix phenomenon is a significant component of the historical reduction in CRA calculated average unit costs for subclasses with workshared mail, it is not logical to simply assume that the volume mix changes will continue into the future. In his response to USPS' interrogatories, Witness Clifton concedes that while mail processing labor unit attributable costs fell by 12.0% over the 1994-1996 time period, the unit costs fell only 1.1%

for the FY95-FY96 time period.[25/] Because only a given amount of mail can qualify for migration to the less expensive automated categories, future shifts in volume to the lower cost automation categories may well occur in much smaller increments, if at all.

Witness Clifton's use of only two years of change in historical data (1994 to 1996) to project unit costs into the future is also suspect. He claims that 1992 through 1996 "is not a sufficient volume history" to make use of data on bulk metered mail for a test of the benchmark,[26/] yet he uses 1994 through 1996 data to project unit costs. He neither models the dynamics of the migration between rate categories nor the costs of these individual rate categories in his forecast. My review of the historical unit cost changes for First-Class presort letters and parcels as set forth in Table 12 below shows that the 1994 to 1996 time period chosen by Witness Clifton represents the largest percentage decrease in unit attributable costs over a two year period in this mail category since 1988.

[25/] Tr. 24/12654
[26/] Tr. 24/12488.

Table 12
Change in Costs for
First-Class Presort Letters and Parcels

Year	Cost (cents/piece)	Percent Change per Period One Year	Two Year
(1)	(2)	(3)	(4)
1988	9.8	xxx	xxx
1989	10.2	4.1%	xxx
1990	10.5	2.9%	7.1%
1991	11.2	6.7%	9.8%
1992	11.6	3.6%	10.5%
1993	11.5	-0.9%	2.7%
1994	11.9	3.5%	2.6%
1995	11.0	-7.6%	-4.3%
1996	10.6	-3.6%	-10.9%

Source: USPS Cost and Revenue Analysis, Fiscal Years 1988-96

Given that this two year period represents the largest percentage decrease in unit attributable costs since 1988 and the recent dynamic migrations shown by Witness Clifton in his Table 8, it is improper to assume that this rate of decline will continue into the test year.

B. WITNESS CLIFTON'S ROLL FORWARD ADJUSTMENT IS BASED ON INCORRECT COST PROJECTIONS

The methodology relied upon in this docket by USPS' Witness Hatfield to calculate test year mail processing costs was previously accepted by the PRC in docket MC95-1 and represents test year mail processing costs for First-Class workshared letters. Witness Clifton's multiple criticisms of USPS' Witness Hatfield's model of test year mail processing costs for First-Class workshared letters result in numerous "qualitative" factors that he relied upon to support his proposed adjustments to the Hatfield model. The primary target of the various criticisms of the USPS model is the roll forward factor. In my opinion, Witness Clifton has focused on the

USPS' roll forward factor because it is the major driver in the calculations of test year mail processing costs and ultimately of First-Class workshared letter discounts. The importance of the roll forward factor to the Hatfield model is shown in Exhibit__MOAA, et al.-RT-1C which contains a flow chart of the USPS' model.

Witness Clifton's recalculation of the USPS' roll forward factor is, in the final analysis, arbitrary and based upon faulty logic. Contrary to Witness Clifton's suggestions at Tr. 24/12480, the Hatfield model already incorporates the impact of volume mix changes into the roll forward factor. As one justification for his recalculated roll forward factor, Witness Clifton suggests that historical aggregate unit cost changes are largely driven by volume mix changes from nonautomation to automation mail. Without concrete data on continued migration, Witness Clifton cannot project historic decreases in mail processing costs into the test year costs and he cannot justify any changes to the roll forward factor developed by the USPS.

Witness Clifton's restatement of the USPS' model contains a roll forward factor of .9737 versus the USPS' value of 1.1280. Clifton calls this a "modest" decline in the roll forward factor.[27/] However, Witness Clifton's proposed roll forward factor is 13.7% less than the roll forward factor proposed by the USPS [(0.9737-1.1280)÷1.1280].

Witness Clifton's calculation of the roll forward factor is based upon qualitative, judgmental considerations made by Witness Clifton.[28/] In addition, Witness Clifton's roll forward factor relies on the continuation of historic decreases in CRA unit cost changes and volume mix

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[27/] Tr. 24/12483
[28/] Tr. 24/12638-12648 and 12653-12655

changes experienced in the 1994 to 1996 time period. As I have explained earlier, these changes are due largely to mix dynamics that are not likely to continue into the test year.

C. THE BULK METERED MAIL BENCHMARK IS PREFERABLE FOR THE CALCULATION OF WORKSHARED DISCOUNTS

Witness Clifton's adjustments to the cost models of USPS' Witness Hume and USPS' Witness Hatfield result in adjusted First-Class workshared unit mail processing and delivery costs in the test year that are much lower than the costs developed by the USPS.[29/] In order to determine the appropriate levels of workshared discounts, Witness Clifton's test year costs are compared to his calculation of a test year benchmark cost. He also suggests that the benchmark itself be increased to maximize the differential between rate category costs and the benchmark, thereby increasing the workshared discounts that are proposed in his testimony.

The PRC supported the use of the bulk metered mail benchmark in its MC95-1 decision:

> The cost differential shown on this record between First-Class single-piece and the First-Class automation categories is likely to be significantly larger than the actual costs avoided, because the benchmark includes the costs of both stamped mail and bulk metered mail. For reasons discussed in the Commission's Opinion in Docket No. R90-1, the single-piece mail most likely to covert to the automation categories is limited to the bulk metered mail component. That component has significantly more homogeneous, and lower, cost characteristics than single-piece mail overall. (MC95-1, Decision, para. [4302], p. IV-136)

The cost of the bulk metered benchmark was not provided in MC95-1. For this reason, the PRC relied upon a modified procedure that used the First-Class single piece benchmark. However, the USPS has since developed the cost of the bulk metered component of single-piece

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[29/] Tr. 24/12496.

mail. This benchmark is used by USPS' Witness Fronk to determine cost based discounts for workshared letters in this proceeding.

With the exception of the discount for retail presort mail which is maintained at its current level, Witness Clifton's workshared discounts are based on the use of the single piece benchmark. The workshared discount for basic automation mail is calculated as 78%[30/] of the cost differential between the single piece benchmark and the basic automation mail rate category. The remaining workshared discounts are based upon the cost savings calculated by Witness Clifton between specific rate categories[31/]. Witness Clifton's proposed basic automation discount, based on the MC95-1 methodology, is over 2 cents greater than the basic automation discount justified by the USPS' model.

Use of the single piece benchmark and the MC95-1 methodology is a step backward in rate design and should be rejected by the PRC. The bulk metered benchmark as developed by the USPS in this proceeding is the best evidence on record and should be used to determine workshared discounts.

D. STANDARD (A) COSTS AND RATES ARE NOT GERMANE TO THE ESTIMATION OF FIRST-CLASS WORKSHARED COSTS AND DISCOUNTS

In an effort to link the costs and rates of specific subclasses of Standard (A) mail with various rate categories of First-Class workshared mail, Witness Clifton is proposing that the ratemaking process be governed by relative similarities, historical dynamics and other subjective characterizations. Witness Clifton's analysis relies upon the apparent similarities in various unit

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30/ Tr. 24/12497-12498.
31/ Tr. 24/12497.

cost characteristics between these mailstreams to reach the conclusion that the mailstreams are similar. This is not true.

First-Class mail letters have a higher value of service than Standard (A) letters. This higher value of service can be demonstrated by the specific characteristics noted below that apply to First-Class mail and not Standard A mail:[32/]

a. First-Class long distance mailings are transported by air;

b. First-Class mail is accorded expeditious handling and high delivery priority;

c. First-Class mail is sealed against inspection;

d. First-Class mail benefits from free forwarding and return to sender; and,

e. First-Class mail benefits from dead letter operations which direct undeliverable mail into proper hands.

Each of these specific characteristics point to the unique and distinct nature of First-Class mail as well as the inherent value of the service provided by USPS. Postal rates for specific mail classes are based upon cost and value of service for that specific mail class and discounts should be based upon the specific costs avoided by workshared activities related to that specific mail class. Comparisons of specific costs and discounts across mail classes are not relevant or useful in the ratemaking process unless the differences in value of service are properly considered.

In making faulty comparisons between First-Class worksharing discounts for specific rate categories with Standard (A) regular rates, Witness Clifton concludes that there "is a gross

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[32/] Witness Foster USPS-T-11, in R94-1, at 33.

inequity between First-Class workshared and Standard (A) in the proposed 'give backs' that is not cost justified by the Commission in its proposed rates."[33/] USPS' Witness Fronk explains in his testimony that the "somewhat smaller discounts reflect the use in this docket of a benchmark that better isolates the cost savings from automation." (USPS-T-32, page 27) USPS Witness Fronk goes on to explain that "to avoid rate shock and to maintain incentives to automate" he did not shrink the discounts for First-Class automated mail by the full difference justified on a cost basis alone (USPS-T-32, page 27).

E. WITNESS CLIFTON'S PROPOSAL FOR CHANGES IN COST COVERAGES FAIL TO CONSIDER HIGHER LEVEL OF SERVICE AND ARE NOT NECESSARY

Witness Clifton's also attacks the USPS' proposal as related to the level of cost coverage for First-Class workshared mail. Witness Clifton characterizes the USPS' cost coverage of 283% for First-Class workshared mail as "inexplicably high" and resulting in "economically inefficient and inequitably high rates."[34/] By definition, cost coverage for a given subclass of mail is the ratio of revenue to volume variable cost for that subclass of mail. Increases in cost coverages, therefore, can be explained by either an increase in revenues, a decrease in costs, or a combination of both. Based upon the unit cost changes caused by the historical volume mix shift in First-Class mail to lower cost worksharing rate categories that I discussed earlier in my testimony, given the methodologies adopted by the PRC lead to increasing cost coverages. In the past, the PRC has determined that reductions in costs due to worksharing should not

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[33/] Tr. 24/12496
[34/] Tr. 24/12499

necessarily result in reductions to the contribution to institutional costs. In MC95-1 the PRC illustrated its approach to worksharing in the following example:

> If two pieces of mail with attributable costs of 10 cents each are charged a rate of 15 cents, both pieces make a unit contribution to institutional costs of 5 cents and have an implicit cost coverage of 150 percent. If one of those pieces is barcoded, thereby allowing the Service to avoid 5 cents of attributable costs, and that piece is given a 5-cent worksharing discount, its new implicit cost coverage is 200. [17/] In this example, because 100 percent of the cost savings is passed on to the mailer, both pieces will continue to contribute 5 cents toward institutional costs. Presumably the worksharing piece is better off, because its total costs decline (otherwise the mailer would not go to the trouble of worksharing) and neither the Postal Service nor other mailers are worse off.
>
> In this example, the implicit cost coverage of the workshare piece is higher than the implicit cost coverage of the piece which does not workshare. In fact, as a matter of arithmetic, in every situation in which some mail allows the Postal Service to avoid costs, the implicit cost coverage for that mail will be higher than the implicit coverage for otherwise similar mail. The Commission believes that this is just. (MC95-1, paragraph 3070-3071, 111-27 and 111-28)

[17/]

Cost	(10-5)	=				5
Revenue	(15-5)	=				10
Cost Coverage	=	$\frac{\text{Revenue}}{\text{Cost}}$	=	$\frac{10}{5}$	=	200 percent

The fact that the cost coverage for First-Class workshared mail is higher than the cost coverage for other First-Class mail is an indication of the effect of decreases in costs caused by the volume mix phenomenon. This increase in cost coverage for First-Class workshared mail is not an issue of equity and efficiency as suggested by Witness Clifton, rather it is a matter of arithmetic.

The USPS in this docket has proposed cost coverages across all mail subclasses. Throughout the ratemaking process the USPS has considered many economic and subjective

factors and their impact on various mail classes. The USPS has not focused exclusively on First-Class workshared rates as Witness Clifton has in his proposal.

The cost coverages proposed by Witness Clifton to remedy his perceived economic efficiency and social welfare losses were set arbitrarily. Witness Clifton has not provided credible quantitative support for his 270% cost coverage figure for First-Class workshared mail.

In order to fund the revenue losses incurred by Witness Clifton's proposed rates for First-Class workshared mail, Witness Clifton unnecessarily increases the cost coverage for Standard (A) mail. This increase in cost coverage for Standard (A) mail completely ignores competitive implications and the differences in value of service discussed above. Furthermore, if the PRC finds the USPS' estimates of First-Class workshared costs are overstated as Witness Clifton alleges, then First-Class revenue requirements can be reduced accordingly. The equitable cure for workshared mailers is to reduce their rates (increase discounts) to reflect the new cost estimates while, simultaneously meeting the reduced First-Class revenue requirements. There is no need or justification to reach into other subclasses for additional funds to meet revenue requirements by changing coverages in other subclasses.

F. WITNESS CLIFTON'S SECOND AND THIRD OUNCE RATE PROPOSAL IS BASED ON FALSE CLAIMS OF CROSS-SUBSIDY

In his direct testimony and in responses to interrogatories and cross-examination, Witness Clifton claims that there exists a cross-subsidy of Standard (A) Commercial mail by First-Class workshared second and third ounce letter mail. The arguments supporting his proposed decrease in rates for the second and third ounce and the funding for the resulting First-Class revenue shortfall are predicated upon this false claim of cross-subsidy. However, Witness Clifton makes

no attempt to analytically prove the existence of cross-subsidy. Furthermore, Witness Clifton obfuscates the concept of the incremental cost test for cross-subsidy by applying the test to part of a product and not the entire product. Below, I use Witness Clifton's definition of cross-subsidy and show that subclasses of Standard (A) mail were free of subsidy in 1996 and are estimated to be free of subsidy in 1998. I also demonstrate the error in his use of incremental costs and revenues.

a. Past and Proposed Revenues Are Free of Cross-Subsidy

In response to ADVO/ABA/NAA-T1-4[35/] Witness Clifton produced a recognized definition of cross-subsidy. Using his definition, a product is receiving a cross-subsidy "when the average incremental revenue contributed by the product of a firm is insufficient to cover its average-incremental cost..."[36/] USPS' Witness Takis (USPS-T-41) follows the theoretical foundation laid by Professor Panzar (USPS-T-11) and calculates the requisite incremental costs for this test for the Base Year 1996 and the Test Year 1998. USPS' Witness Alexandrovich and USPS' Witness Patelunas provide the corresponding incremental revenues for 1996 and 1998, respectively. These data are shown for Standard (A) subclasses as Column (3) and Column (6), respectively in Table 13 below. I use the ratio of revenue to cost to test cross-subsidy. If this ratio minus one (expressed as a percent) is positive, it indicates the amount of error that can be tolerated in the ratio and still be assured that no cross-subsidy exists. If the ratio is greater or equal to one, then incremental revenues are greater than incremental costs and there is no cross-subsidy.

35/ Tr. 21/10920

36/ Witness Clifton's quote is sourced to Baumol, William J. and J. Gregory Sidak, *Toward Competition in Local Telephony*, Cambridge, MA: The MIT Press, 1994 page 62. The remainder of the quote simply guarantees that firm is covering all costs with earned revenue.

Table 13
Costs and Revenues of Standard (A) Subclasses
(Cents Per Piece)

Subclass (1)	1996 Volume Variable Cost (2)	1996 Incremental Cost (3)	1996 Revenue (4)	1998 Volume Variable Cost (5)	1998 Incremental Cost (6)	1998 Revenue (7)
Standard (A)						
Regular ECR	$6.2	$6.5	$14.7	$6.6	$6.9	$14.9
Regular Other	13.8	14.1	21.0	13.8	14.1	21.2

Sources: Columns 2,4: USPS-5C, pages 18-19.
Columns 5,7: USPS-15J, pages 18-19.
Column 3: Column (2) x [Respective entry from Column (3) of USPS-41 B (Revised 10/09/97)].
Column 6: Respective entry from Column (8) of USPS-41B [Revised 10/09/97 (Rounded)].

Based on the data shown in Table 13, Table 14 below shows the values of the test for each subclass of Standard (A) mail for 1996 (Column (2)) and 1998 (Column (3)).

Table 14
Incremental Cost Test for Cross Subsidy
[No Cross-Subsidy if Test is Greater Than or Equal to One]

Subclass (1)	1996 Test (actual) (2)	1998 Test (estimated) (3)
Regular ECR	2.26	2.16
Regular Other	1.49	1.50

Sources: Column (2) = Table 13, Column (4) ÷ Column (3).
Column (3) = Table 13, Column (7) ÷ Column (6).

The Standard (A) subclasses in Table 13 pass the test for being free from subsidy with a tolerance for at least 49% error. For Regular ECR mail there could be error in the revenue and cost estimates cumulating to 100% in the estimate of the ratio and still there would be no cross subsidy. Therefore, no factual foundation exists for Witness Clifton's charge of "apparent" cross-subsidy of Standard (A) mail subclasses.

b. Error in Witness Clifton's Use of Incremental Costs and Revenues

Witness Clifton's analysis of workshared First-Class rates for second and third ounces claims to rely on incremental costs.[37/] He treats the cost or revenue of one additional ounce in a one ounce letter as "incremental" cost or revenue. In a generic sense this appears to be acceptable, but technically, with respect to the test for cross-subsidy, this terminology is very misleading. According to the definition of cross-subsidy the "incremental" cost and "incremental" revenue must be associated with a product. The second ounce for a First-Class piece of mail is not a product, it is a part of the total product. Stated differently, a USPS customer cannot send a second ounce without including the total first ounce. The example in Table 15 illustrates the difference.

[37/] No clear distinction is made by Witness Clifton between incremental cost and marginal cost. For the incremental cost test, the average incremental cost is the total costs that would be avoided if the product were not produced at all divided by the current or projected production volume.

Table 15
Incremental Cost for Subsidy Test Versus Clifton Incremental

	Average Incremental (1)	Product 1 Ounce Letter (2)	Product 2 Ounce Letter (3)	Clifton Incremental (4)
Standard (A): Uniform Price Below The Breakpoint				
1. Cost		2.0¢	3.0¢	1.0¢
2. Revenue		6.0	6.0	0.0
3. Test for Subsidy (L2 ÷ L1)		3.0	2.0	0.0
First-Class				
4. Cost		2.0¢	3.0¢	1.0¢
5. Revenue		4.0	6.0	2.0
6. Test for Subsidy (L5 ÷ L4)		2.0	2.0	1.0

Source: Product cost and produced revenue data are a hypothetical example.
Column (4) = Column (3) - Column (2) (except for Lines 3 and 6).

The uniform price below the breakpoint that is used in Standard (A) mail will always fail the test implicitly used by Witness Clifton. When properly applied to a product, the one ounce and the two ounce letters both pass the test for no subsidy with scores of 2 and 3, respectively. However, using the Clifton incremental approach that is not associated with any product, the "second ounce" shows cross-subsidy. This is incorrect. The incremental costs and revenues must be associated with a product to make the concept of a cross subsidy operational.

V. CRITIQUE OF MMA'S WITNESS BENTLEY'S PROPOSED FIRST-CLASS WORKSHARED DISCOUNTS

Witness Bentley, like Witness Clifton, has proposed increases in discounts for First-Class automation letters above those set forth by the USPS in this proceeding.[38/] As a preamble to his analysis supporting discounts he has proposed in this proceeding, he quotes extensively from prior PRC opinions regarding the necessity that discount levels reflect savings that are "solidly grounded in costs."[39/]

Rather than relying upon the methodology for developing test year mail processing unit costs as set forth by the USPS in this proceeding, Witness Bentley relies upon the methodology for developing test year mail processing unit costs as adopted by the PRC in MC95-1. The MC95-1 methodology produces discounts that are greater than those proposed by the USPS in this proceeding.

As I noted in my rebuttal testimony concerning Witness Clifton's proposals, the methodology used by Witness Hatfield in this proceeding is an improvement on the methodology accepted by the PRC in MC95-1 and, as such, is the best cost evidence on record and should be used to determine workshared discounts in this proceeding. (See Section IV.C, above)

Witness Bentley argues that there are many reasons to justify increased discounts.[40/] The reasons listed by Witness Bentley are similar to the subjective arguments set forth by Witness Clifton in his direct testimony. Although Witness Bentley does not quantify these subjective

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[38/] Although Witness Bentley's preference is to maintain the 32 cent stamp, his proposal is for reductions in "rates for Automation and 2-ounce letters".

[39/] Tr. 21/11167

[40/] Tr. 21/11169-73

arguments as Witness Clifton has, Witness Bentley's proposed discounts should be rejected by the PRC for the same general reasons noted in my rebuttal to Witness Clifton in the previous section of my testimony.

VI. CRITIQUE TO AAPS' WITNESS BRADSTREET'S RHETORIC

Witness Bradstreet, on behalf of AAPS, asserts that the USPS is a monopoly which has once again submitted "an anticompetitive, unjustifiable rate proposal".[41/] He argues that the USPS takes advantage of its unique monopoly position by exploiting its "monopoly customers for competitive purposes",[42/] favoring what he considers the competitive mail over the "captive" mail.

Witness Bradstreet claims AAPS volumes are the "competitive" mail that has been targeted, suffering significant competitive harm from the USPS. Yet he makes no attempt to quantify, evaluate or analyze his claims or offer any information regarding the effects the USPS' past or proposed rates have had on his industry. In response to interrogatories, Witness Bradstreet says he does not have volume, revenue or profit data of AAPS members and cannot provide information on the rates AAPS members charge.[43/] AAPS also cannot identify the volumes or weight of the different types of mail they deliver.[44/] Therefore, Witness Bradstreet is reduced to "nontechnical" testimony. For his rhetorical argument, Witness Bradstreet relies on his perception of the USPS as a monopoly, his interpretation of the criteria in the Postal Reorganization Act's (the "Act"), and what he considers incorrect and inadequate costing procedures by the USPS to suggest that rates for ECR mail should be increased. In Witness Bradstreet's view, such an increase would enable the AAPS to better compete with the USPS.

41/ AAPS-T-1, page 5.
42/ AAPS-T-1, page 47.
43/ Interrogatory response MOAA/AAPS-T1-10 (Tr. 23/12038).
44/ Interrogatory responses MOAA/AAPS-T1-2, 5 and 10 (Tr. 23/12030, 12033, 12038).

Witness Bradstreet has numerous concerns regarding the USPS' pricing procedures and the historical trend in rates for his claimed monopoly mail versus competitive mail. My response to Witness Bradstreet is discussed below under the following topics.

A. Rates In A Regulated Environment

B. Impact of Pricing on Alternative Mail

C. Historical Rate Trends

D. Cost Trends

E. Ramsey Pricing

A. RATES IN A REGULATED ENVIRONMENT

Witness Bradstreet states the USPS has a monopoly on the delivery of letters and enjoys special advantages with respect to pricing and costing not provided to other alternative postal systems. He uses the utility industry as his support for further regulation. He reasons that utilities have been highly regulated because "[t]he opportunities for abuse are too great, and therefore utilities are, and have historically been, highly regulated businesses"[45/] and "[t]herefore, the USPS must be regulated far more carefully than if its only advantage were a monopoly privilege."[46/] Witness Bradstreet is incorrect in both of these statements. First, although it is true that utilities "have historically been highly regulated businesses", recent developments in the applications of economics have resulted in major deregulation of natural gas[47/], pipelines[48/], and electric utilities[49/] and in other industries such as railroads, airlines, trucking, and telecommunications. Therefore, his inference that these industries are still "highly regulated"

45/ AAPS-T-1, page 6.
46/ AAPS-T-1, page 7.
47/ Federal Energy Regulatory Commission Order No. 636, issued April 8, 1992.
48/ Federal Energy Regulatory Commission Order No. 636, issued April 8, 1992.
49/ Federal Energy Regulatory Commission Order No. 888, issued April 24, 1996.

is incorrect. Second, the USPS is highly regulated. The testimony submitted in this proceeding (including Witness Bradstreet's testimony) is part of a lengthy process that serves to enforce the intent of the Postal Reorganization Act.

B. IMPACT OF PRICING ON ALTERNATIVE MAIL

Witness Bradstreet suggests that the USPS' customers are not the only ones that should be protected from rate increases. He states postal ratemaking should consider the Act's criteria: "the effect of rate increases upon the general public, business mail users, and enterprises in the private sector of the economy engaged in the delivery of mail matter other than letters".[50/] He feels rate changes for competitive classes of mail that are so low (or negative) as to hurt competitors are to be avoided. Yet, in his responses to interrogatories he says it is not his testimony that competitors' lost business due to USPS rate changes that violate the Act. He also believes the USPS is not required to raise rates when competitors do, and is not responsible for ensuring competitors can charge more although "that would be nice."[51/] Witness Bradstreet provides no information on how the proposed rate schedule will be injurious to competitors, particularly the alternative delivery systems.

50/ AAPS-T-1, page 21.
51/ R97-1, Interrogatory Response VP-CW/AAPS-T1-2 (Tr. 23/12060).

Witness Bradstreet further questions the USPS' consideration of Criteria 3 and 5 of the Act in its development of postal rates. The Act states:

> (3) the requirement that each class of mail or type of mail service bear the direct and indirect postal costs attributable to that class or type plus that portion of all other costs of the Postal Service reasonably assignable to such class or type.
>
> (5) the available alternative means of sending and receiving letters and other mail matter at reasonable costs.

USPS Witness O'Hara's testimony states that the cost coverages for Standard (A) Commercial Regular and ECR are 155% and 228% respectively, obviously covering their own costs and contributing to institutional costs.[52/] (See Section IV. G. (above) on cross subsidy.) Yet, Witness Bradstreet again offers no analysis of "reasonable costs" or the quantification of coverages; he does not advocate an alternative rate proposal.

Witness Bradstreet also believes the USPS is an overzealous competitor that does not like regulation and "has done everything it can think of to escape PRC review".[53/] He states that the USPS has specifically targeted saturation mail for special treatment since the late 1970's and that "ECR saturation and high density mail are the only significant part of the Standard Mail mailstream open to competition".[54/] There plainly are other types of mail in Standard (A) ECR open to competition.

Witness Bradstreet dismisses the USPS' efforts in "improving service and keeping costs low" claiming they simply "lower rates for competitive mail and increase rates for mail that has

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[52/] R97-1, USPS-T-30, pages 32, 34
[53/] AAPS-T-1, page 8.
[54/] AAPS-T-1, page 9.

no competitive options."[55/] To the contrary, the USPS' efforts to reduce costs has a direct effect on keeping the rates of the "captive" market low. Improvements in operational efficiency along with other economies of scale and scope cause lower rates in a competitive environment. Lower rates for these services will bring increased volumes which result in even lower average unit costs for all mail.

C. HISTORICAL RATE TRENDS

In his Table A, "A Rate Trend Comparison Saturation Flats vs. Monopoly Mail," Witness Bradstreet attempts to show that lowering rates for competitive mail has been the USPS' and PRC's practice since 1978 by looking at the percent changes in rates for Third Class/Standard (A) Saturation flats ("competitive mail") and the "monopoly mail," First-Class letters and Third Class/Standard (A) Basic flats. As shown in Table 16, Column (5) below, Witness Bradstreet's trends show that the rates for First-Class letters and Third/Standard (A) Basic nonletters have increased 113% and 264%, respectively, over the last twenty years compared to the Third/Standard (A) ECR-Saturation flat rate increase of 36%. Besides his lack of sources or support to his calculations, his summary and conclusions are biased and flawed.

[55/] AAPS-T-1, page 15.

Table 16
USPS Rate Trends

Rate Class/Category	Rate Trend Comparison (Cents Per Piece) 1978	1991	1996	Percent Change 78 to 96	91 to 96
(1)	(2)	(3)	(4)	(5)	(6)
1. First-Class Letters	15.0	29.0	32.0	113%	10%
2. Third Class/Standard Basic Nonletter	8.4	23.3[1/]	30.6	264%	31%
3. Third Class/Standard:					
a. ECR Nonletters[2/]	8.4	12.7	13.7	63%	8%
b. ECR Saturation - DDU	8.4	10.5	11.4	36%	9%

[1/] Witness Bradstreet shows a rate of 22.3 cents per piece.
[2/] Rates do not include any destination discounts resulting from worksharing.
Source: R97-1, Library Reference H-87, "Volume, Revenue, Rate, Fee, and Transaction"

First, Witness Bradstreet includes the maximum worksharing discounts related to sortation and destination entry cost savings in his current ECR-Saturation rate. As shown in Table 16, Line 3a, the rates for ECR-Saturation without the worksharing discounts have increased 63% since 1978, more comparable to First-Class letters.

As shown in Table 16, Column (6) above, Witness Bradstreet compares the two "monopoly" mail rate categories to the ECR-Saturation mail that did not exist in 1978. Although Third Class/Standard Basic nonletters have increased 31% over this same time period, Witness Bradstreet failed to point out that this group of mail only accounts for 1.3%[56/] of all Standard (A) Commercial volumes and that they chose not to take advantage of the worksharing discounts available to them such as shifting to automation or 3/5 digit preparation. The only legitimate comparison must use the 1991 rates from when ECR-Saturation was first instituted. Since then,

[56/] 847 million pieces of nondropshipped Regular Basic nonletter piece rated mail divided by 66,314 million pieces of Standard (A) mail. USPS-T-36, workpaper 1, page 20.

ECR-Saturation rates have increased nearly the same as First-Class letters, 9% and 10% respectively. Therefore, Witness Bradstreet's comparisons of rate trends that apply base rates to subclasses that did not exist is biased.

D. COST TRENDS

Although Witness Bradstreet chose rates with worksharing discounts, he failed to recognize the cost trends and worksharing cost savings behind those rates. Since the CRA does not differentiate between letters and nonletters, the changes in the attributable costs per piece for First-Class and Third-Class Standard (A) for the 1978 to 1996 time period is summarized in Table 12 below.

Table 12

Percent Change in Attributable Costs from 1978 to 1996

	Percent Change (1)
First-Class	+52%
Third Class Bulk Rate Regular[2/]	-10%

[1/] Average cost per piece from USPS Cost Revenue Analysis, 1978 & 1996; unadjusted for mix changes

[2/] Reflects all Third Class because saturation did not exist in 1978 .

As shown in Table 12 above, First-Class costs per piece have increased 52%, while the average costs for Third Class/Standard (A) ECR has decreased 10%. This demonstrates that

rates can be decreased for Third Class/Standard (A) mail to address competition and still provide the same (or greater) level of contribution.

In summary, Witness Bradstreet's "Rate Trend Comparison" does not support his claim that rates have been lowered for competitive mail at the expense of monopoly mail. He did not address the costs the rates were based on and chose to compare rates that include worksharing discounts for different types of mail that did not exist in 1978.

E. RAMSEY PRICING

As pointed out by Witness Bradstreet, the USPS' rates are designed to cover the direct and indirect costs of the USPS. Aside from Witness Bradstreet's alleged monopolistic motives for First-Class and competitive motives for Third Class, his testimony questions the USPS' ratemaking based on the USPS' use of Ramsey Pricing.

Witness Bradstreet believes that the USPS' objective in using Ramsey Pricing is to put the alternative delivery industry out of business. He also argues that "sponsoring Ramsey Pricing in a postal context is tantamount to ignoring Congress and tossing nearly the entire ratemaking criteria section out of the Postal Reorganization Act".[57/] Witness Bradstreet's testimony and interrogatory responses acknowledge that no USPS witness proposed rates based on Ramsey Pricing.[58/] In addition, as confirmed by Witness Bradstreet[59/], the Ramsey Pricing data submitted

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57/ AAPS-T-1, page 29.
58/ AAPS-T-1, page 29.
59/ R97-1 Interrogatory Response USPS/AAPS-T1-10a (Tr. 23/12049).

in this proceeding suggest that if rates for the ECR subclass were based on Ramsey Pricing, then the ECR rates would decrease by 50 percent.

The R97-1 Chown Metric is a Scaler Multiple of the R90-1 Unbundling Method with Equal Markups[1/]

The following is a general statement of the system of cost functions, subclasses (or products), volume variable costs, and institutional costs of the Postal Service:

I_j	= Institutional costs "identifiable" with cost function j
$I_{\cdot} = \sum_{j=1}^{m} I_j$	= The total of all "identifiable" institutional costs
V_{ij}	= The total volume variable costs in cost function j that have been shown to vary with a change in volume of subclass i
$V_{\cdot j} = \sum_{i=1}^{n} V_{ij}$	= The total of all volume variable costs for all classes served by cost function j
$V_{\cdot\cdot} = \sum_{j=1}^{m} V_{\cdot j}$	= Total volume variable cost in the system
j	= Name (index) of the cost function (j = 1, 2,...,m)
m	= The total number of cost functions
i	= Name (index) of the subclass (i = 1, 2...,n)
n	= The total number of subclasses

A. The R90-1 Unbundling Method with equal markups for the recovery of "identifiable" institutional costs at the cost function level yields a markup of the volume variable cost of the ith subclass and the jth cost function equal to:

$$I_j * \frac{V_{ij}}{V_{\cdot j}} \qquad \text{(equation a)}$$

[1/]Items A through E of this exhibit were confirmed by witness Chown in her response to AMMA/NAA-T1-4 (Tr. 25/13322).

B. The total of these distributed "identifiable" institutional costs for all cost functions used by the ith subclass is equal to:

$$\sum_{j=1}^{m} [I_j * V_{ij}/V_{\cdot j}] \qquad \text{(equation b)}$$

C. The weighting factor for the Chown metric in R97-1 for the jth cost function is equal to:

$$\frac{I_j}{V_{\cdot j}} * \frac{V_{..}}{I_{\cdot}} \qquad \text{(equation c)}$$

D. The R97-1 weighting factor for the jth cost function, when used to weight the volume variable cost of the ith subclass, is equal to:

$$\frac{I_j * V_{ij}}{V_{\cdot j}} * \frac{V_{..}}{I_{\cdot}} \qquad \text{(equation d)}$$

E. The total of the R97-1 weighted volume variable costs for the ith subclass is equal to the Chown metric:

$$(\frac{V_{..}}{I_{\cdot}}) * \sum_{j=1}^{m} [I_j * V_{ij}/V_{\cdot j}] \qquad \text{(equation e)}$$

F. The term (V../I.) in equation e is a constant (scaler) equal to the ratio of the total volume variable costs of the system to the total identifiable institutional costs of the system. This term forces the sum of the weighted volume variable costs to equal the total system volume variable costs:[2/]

$$\sum_{i=1}^{n} \{(\frac{V_{..}}{I_{\cdot}}) * \sum_{j=1}^{m} [I_j * V_{ij}/V_{\cdot j}]\}$$
$$(\frac{V_{..}}{I_{\cdot}}) * \sum_{j=1}^{m} [I_j * (\sum_{i=1}^{n} V_{ij})/V_{\cdot j}] \qquad \text{(equation f)}$$
$$V_{..}$$

[2/]This fact was also confirmed by witness Chown on cross examination (Tr. 25/13404).

G. The Chown metric of R97-1 is a constant (scaler) multiple of the result obtained by applying the R90-1 Unbundling Method where equal markups are required to recover each cost function's identifiable institutional costs and summed across all cost functions; i.e.:

$$(equation\ e) = \left(\frac{V_{..}}{I_{.}}\right) * (equation\ b)$$

Behavior Characteristics of the Chown Metric

Base Case: From NAA-T-1

		Function 1.	Function 2.	Totals	System Wide	Total Institutional
1.	Institutional Costs	30	120	150	0	150
2.	Percent of Total	20.00%	80.00%	100.00%	Markup %=	60%
		Attributable Costs				
3.	Class A	75	50	125		
4.	Class B	75	0	75		
5.	Class C	0	50	50		
6.	Function Total	150	100	250		
7.	Percent of Total	60.00%	40.00%	100.00%		
8.	Weighting Factors (L 2/L 7)	0.333	2.000			
		Weighted Attributable Costs				
9.	Class A	25.00	100.00	125.00		
10.	Class B	25.00	0.00	25.00		
11.	Class C	0.00	100.00	100.00		

Using Marginal Cost Metric

Markup	Rate	Percent Base Rate	Cost Coverage
75.00	200.00	100.0%	1.60
45.00	120.00	100.0%	1.60
30.00	80.00	100.0%	1.60

Using Chown Metric

Markup	Rate	Percent Base Rate	Cost Coverage
75.00	200.00	100.0%	1.60
15.00	90.00	100.0%	1.20
60.00	110.00	100.0%	2.20

Source: NAA-T-1 Tables 4, 6, 7, and 8.

Behavior Characteristics of the Chown Metric

Case 1: Increase System-Wide Institutional Cost by $100

		Function 1.	Function 2.	Totals	System Wide	Total Institutional
1.	Institutional Costs	30	120	150	100	250
2.	Percent of Total	20.00%	80.00%	100.00%	Markup %=	100.0%
		Attributable Costs				
3.	Class A	75	50	125		
4.	Class B	75	0	75		
5.	Class C	0	50	50		
6.	Function Total	150	100	250		
7.	Percent of Total	60.00%	40.00%	100.00%		
8.	Weighting Factors (L 2/L 7)	0.333	2.000			
		Weighted Attributable Costs				
9.	Class A	25.00	100.00	125.00		
10.	Class B	25.00	0.00	25.00		
11.	Class C	0.00	100.00	100.00		

Using Marginal Cost Metric

Markup	Rate	Percent Base Rate	Cost Coverage
125.00	250.00	125.0%	2.00
75.00	150.00	125.0%	2.00
50.00	100.00	125.0%	2.00

Using Chown Metric

Markup	Rate	Percent Base Rate	Cost Coverage
125.00	250.00	125.0%	2.00
25.00	100.00	111.1%	1.33
100.00	150.00	136.4%	3.00

Source: NAA-T-1 Tables 4, 6, 7, and 8; with changes as noted (above).

Behavior Characteristics of the Chown Metric

Case 2: Class A Workshares Function 2, Saving $25

		Function 1.	Function 2.	Totals	System Wide	Total Institutional	Marginal Cost Metric Markup	Rate	Percent Base Rate	Cost Coverage
1.	Institutional Costs	30	120	150	0	150				
2.	Percent of Total	20.00%	80.00%	100.00%	Markup %=	67%				
		Attributable Costs								
3.	Class A	75	25	100			66.67	166.67	83.3%	1.67
4.	Class B	75	0	75			50.00	125.00	104.2%	1.67
5.	Class C	0	50	50			33.33	83.33	104.2%	1.67
6.	Function Total	150	75	225						
7.	Percent of Total	66.67%	33.33%	100.00%						
8.	Weighting Factors (L 2/L 7)	0.300	2.400							
		Weighted Attributable Costs					Using Chown Metric Markup	Rate	Percent Base Rate	Cost Coverage
9.	Class A	22.50	60.00	82.50			55.00	155.00	77.5%	1.55
10.	Class B	22.50	0.00	22.50			15.00	90.00	100.0%	1.20
11.	Class C	0.00	120.00	120.00			80.00	130.00	118.2%	2.60

Source: NAA-T-1 Tables 4, 6, 7, and 8; with changes as noted (above).

Behavior Characteristics of the Chown Metric

Case 3: Class A Workshares Function 2, Saving $25; and Increase System-Wide Institutional Cost by $100

		Function 1.	Function 2.	Totals	System Wide	Total Institutional
1.	Institutional Costs	30	120	150	100	250
2.	Percent of Total	20.00%	80.00%	100.00%	Markup %=	111%
		Attributable Costs				
3.	Class A	75	25	100		
4.	Class B	75	0	75		
5.	Class C	0	50	50		
6.	Function Total	150	75	225		
7.	Percent of Total	66.67%	33.33%	100.00%		
8.	Weighting Factors (L 2/L 7)	0.300	2.400			
		Weighted Attributable Costs				
9.	Class A	22.50	60.00	82.50		
10.	Class B	22.50	0.00	22.50		
11.	Class C	0.00	120.00	120.00		

Using Marginal Cost Metric

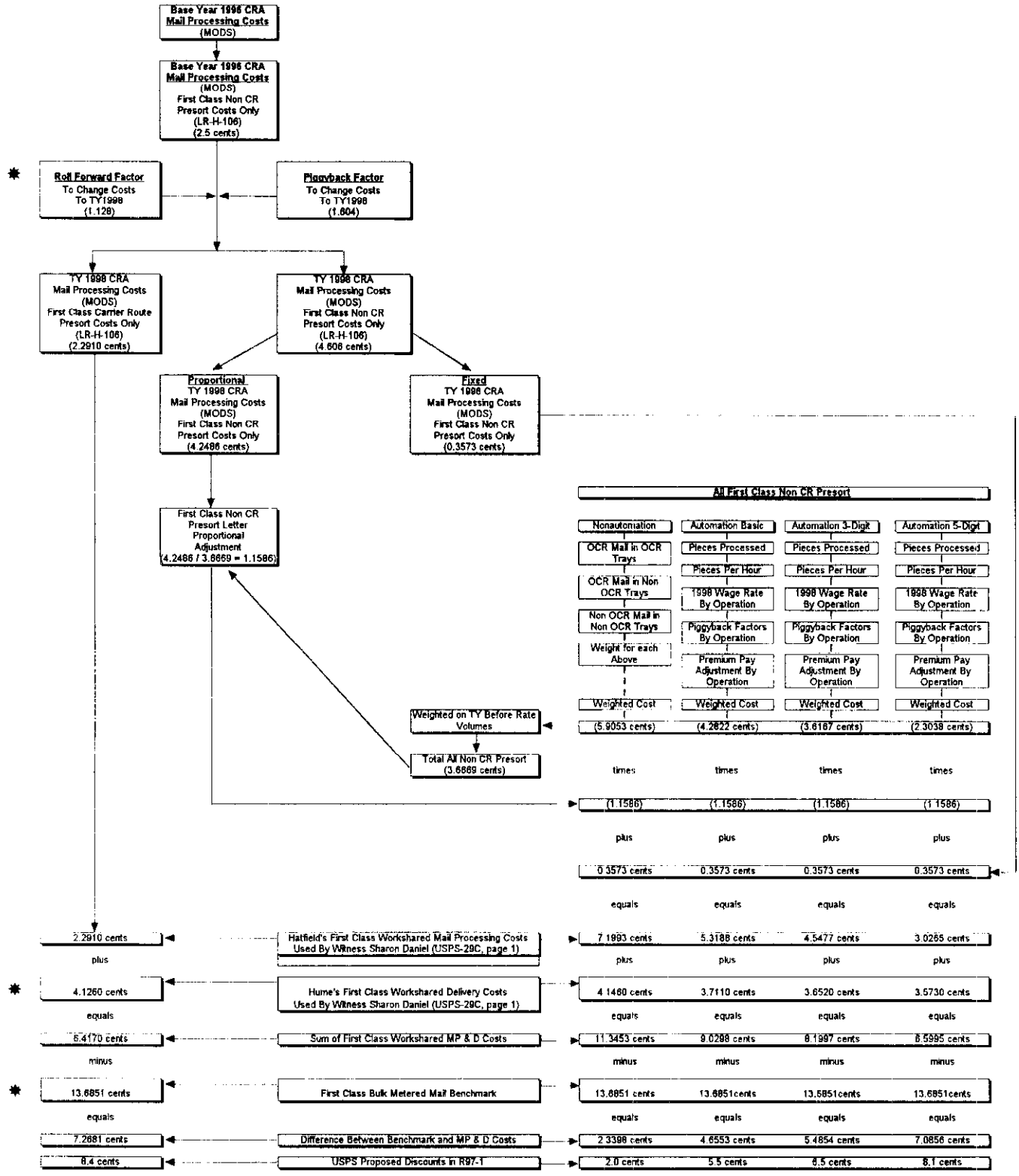
Markup	Rate	Percent of Base	Cost Coverage
111.11	211	106%	2.11
83.33	158	132%	2.11
55.56	106	132%	2.11

Using Chown Metric

Markup	Rate	Percent of Base	Cost Coverage
91.67	192	96%	1.92
25.00	100	111%	1.33
133.33	183	167%	3.67

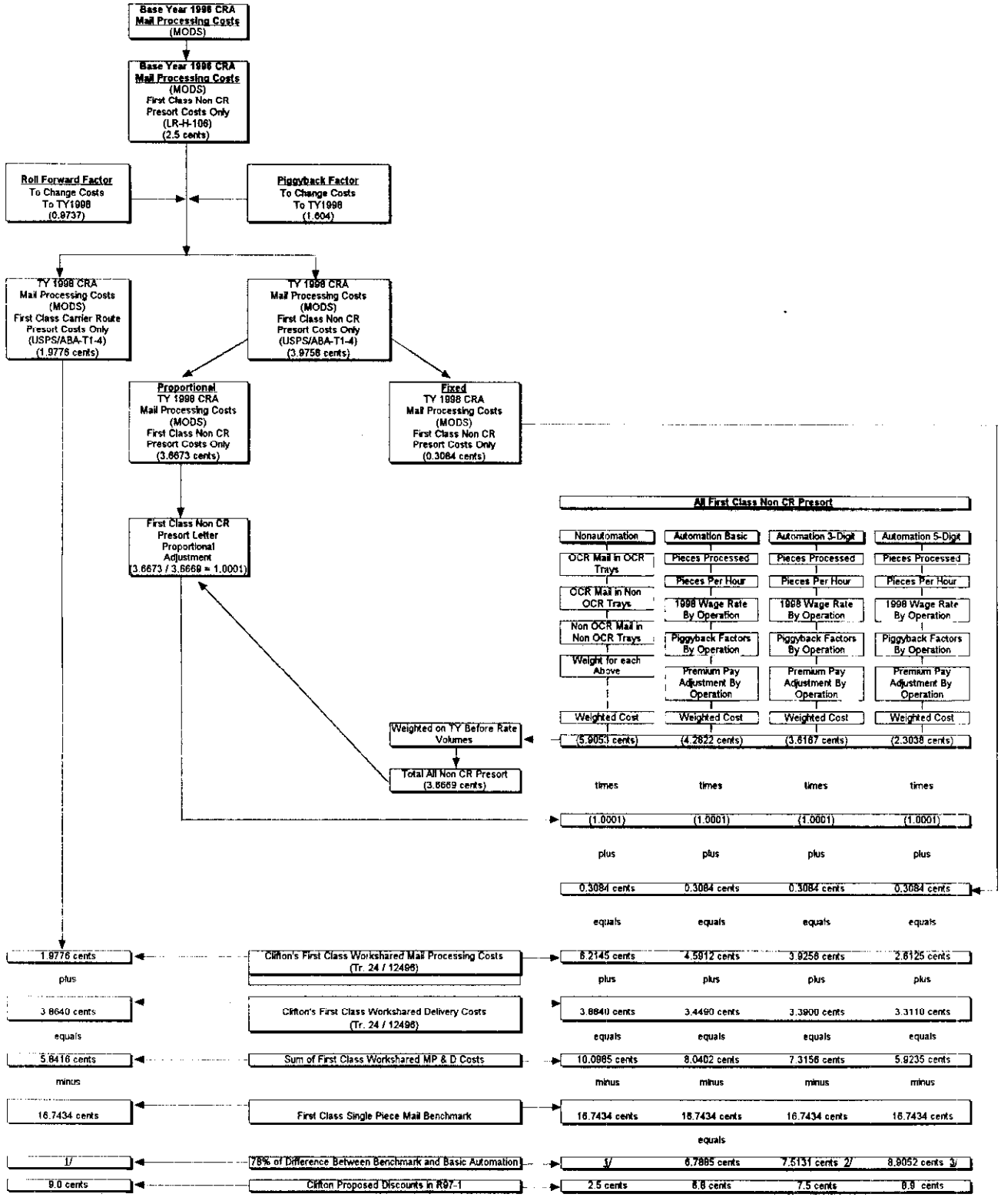
Source: NAA-T-1 Tables 4, 6, 7, and 8; with changes as noted (above).

DEVELOPMENT OF USPS' PROPOSED FIRST CLASS WORKSHARED LETTER MAIL DISCOUNTS



✱ Denotes area where Witness Clifton has proposed adjustments to the USPS' Witness Hatfield /Hume models.

DEVELOPMENT OF USPS' PROPOSED FIRST CLASS WORKSHARED LETTER MAIL DISCOUNTS
(With Witness Clifton's Proposed Changes)



✱ Denotes Witness Clifton's proposed adjustment to the USPS' Witness Hatfield /Hume models.

1/ Not applicable to the calculation of Witness Clifton's discount levels.
2/ Automation Basic discount plus cost savings between Automation Basic and Automation 3-Digit.
3/ Automation Basic discount plus cost savings between Automation Basic and Automation 5-Digit.

CERTIFICATE OF SERVICE

I hereby certify that I have caused to be served a copy of MOAA,-et al, RT-1 upon all participants of record in this proceeding in accordance with section 12 of the rules of practice.

David C. Todd

March 9, 1998